

IN THE CLAIMS:

All pending and new claims are provided immediately below.

Please amend Claim 80 as follows:

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D1
80. (Twice Amended) A method for locating a wireless mobile station, comprising:
- receiving first data related to wireless signals communicated between a particular mobile station and at least a first network of a plurality of commercial mobile service provider networks, wherein for each said network, there are a plurality of base stations for at least one of transmitting and receiving wireless signals with a corresponding plurality of mobile stations registered with the network, and wherein said particular mobile station is registered with said first network for subscribing to a wireless service;
- first requesting a first location estimate of the particular mobile station, wherein a first location estimator provides said first location estimate of the particular mobile station when said first location estimator is supplied with first location information including data obtained using the first data, said location information capable of changing with a change in a location of the particular mobile station;
- wherein when said first location estimate is one of: (a) deemed ambiguous, (b) can not be provided, (c) is not within a desired range of accuracy, and (d) has an extent greater than or equal to a predetermined size, then the steps (A1) and (A2) are performed: (A1) instructing said particular mobile station to communicate with a second network of the plurality of networks for supplying second data, wherein said particular mobile station is not registered with said second network for subscribing to a wireless service, and wherein said second data is obtained using wireless signals communicated between the particular mobile station and the second network;
- (A2) second requesting a second location estimate of said particular mobile station wherein said second location estimate is obtained using additional location information obtained at least in part from the second data;
- outputting location information for the particular mobile station, wherein said location information is dependent upon at least one of the first and second estimates of the particular mobile station.
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81. (unamended) A method for locating a wireless mobile station, comprising:

first receiving first signal characteristic measurements of wireless signals communicated between a mobile station and a first network of communication stations, wherein said communication stations in the first network are cooperatively linked by a first wireless service provider for wirelessly communicating with the mobile station;

instructing the mobile station to search for a wireless signal from a second network of communication stations that are cooperatively linked by a second wireless service provider for providing wireless communication, wherein said mobile station is a subscriber of said first wireless service provider, and said mobile station is not a subscriber of said second wireless service provider;

second receiving second signal characteristic measurements of wireless signals communicated between the mobile station and said second network of communication stations;

estimating a location of the mobile station using at least one of said first and second signal characteristic measurements.

3.
82 (unamended) A method for locating a wireless mobile station as claimed in Claim 81, wherein the mobile station is registered for a wireless communication service with the first wireless service provider, and the mobile station is not registered for the wireless communication service with the second wireless service provider.

4.
83 (unamended) A method for locating a wireless mobile station as claimed in Claim 81, wherein said step of instructing includes transmitting a command to the mobile station for instructing the mobile station to search for a signal from a communication station of said second wireless service provider in a frequency bandwidth different from a frequency bandwidth for communicating with the communication stations of said first wireless service provider.

5.
84 (unamended) A method for locating a wireless mobile station, as claimed in Claim 81, wherein said step of estimating includes a step of computing a most likely location of said mobile station using a fuzzy logic computation.

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85. (unamended) An apparatus for locating a first mobile station, wherein the first mobile station communicates via wireless signals with a first wireless network infrastructure having:

a plurality of spaced apart communication stations for wireless communication with said first mobile station, wherein at least one of said first mobile station and said first wireless network infrastructure has a capability for obtaining a plurality of multipath measurements for one of: one or more forward transmissions to said first mobile station, and one or more reverse transmissions from said first mobile station to said first wireless network infrastructure, and wherein said multipath measurements are derived from both fixed clutter and variable clutter, comprising:

an interface for receiving values indicative of said multipath measurements for at least one of said forward transmissions and said reverse transmissions;

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contd
a mobile station location determining system for locating said first mobile station, wherein said location determining system uses the values, and generates additional values that have an enhanced dependence on multipath measurements derived from fixed clutter as compared to multipath measurements derived from variable clutter;

wherein said mobile station location determining system includes at least one wireless location determining model for estimating a location of said first mobile station, said at least one model uses one or more of said transformed values;

an output interface for outputting to one of: a communication network that provides telephony services, and the Internet a resulting location estimate of said first mobile station, said resulting location estimate obtained from said location determining system.

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86. (unamended) An apparatus for locating a mobile station, comprising:

a wireless network for communicating with a plurality of mobile stations, wherein said network at least one of: transmits and receives wireless signals from the mobile station, and wherein said wireless signals are transmitted by the network in a forward bandwidth and said wireless signals are received at the network in a different reverse bandwidth, and, said wireless network includes a plurality of spaced apart communication stations for communicating via said wireless signals with said plurality of

mobile stations;

an interface for supplying to a mobile station location obtaining system measurements including: (i) first measurements of said wireless signals transmitted to the mobile station in said forward radio bandwidth, and (ii) second measurements of said wireless signals received from the mobile station in said reverse radio bandwidth;

wherein said mobile station location obtaining system estimates a location of said first mobile station using both said first measurements and said second measurements.

87. (unamended) The apparatus of Claim 86, wherein said interface provides to said mobile station obtaining system data indicative of CDMA finger measurements related to said radio signals communicated between the network and the mobile station.

88. (unamended) A method for locating a mobile station using wireless signal measurements obtained from transmissions between the mobile station and at least one of a plurality of communication stations, wherein each of said communications stations includes one or more of a transmitter and a receiver for wirelessly communicating with the mobile station, comprising::

transmitting to the mobile station, a control message from one of the communication stations, wherein said message is received by a receiving antenna of said mobile station;

wherein the control message requests activation of at least one of a control processor and a searcher receiver in the mobile station, for determining a plurality of multipath finger sets for a wireless communication between said mobile station and at least a first of the communication stations, wherein for at least some of said multipath finger sets are different;

receiving information related to said finger sets in response to transmissions from the mobile station;

supplying said information for at least one of said finger sets to a mobile station location estimator for estimating a location of said mobile station.

89. (unamended) A method for locating a wireless mobile station, comprising:

receiving data indicative of wireless signal measurements obtained via wireless signals communicated between a particular mobile station and a plurality of communication stations of a wireless infrastructure operated by a commercial radio service provider, wherein said particular mobile station is not registered with said commercial radio service provider;

wherein each of said communications stations includes one or more of a transmitter and a receiver for wirelessly communicating with said particular mobile station;

wherein said data includes information that is dependent upon a location of each of at least a first and a second of said plurality of communication stations;

determining, using at least said information, an estimate of a location, L, of said particular mobile station;

wherein said step of determining includes performing a substep of obtaining at least (a) and (b) following: (a) first location data indicative of a first range of locations for L relative to said first communication station, and (b) second location data indicative of a second range of locations for L relative to said second communication station.

Please add the following new Claims 90-95:

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90. (New) The method of Claim ¹80, further including a step of determining said location information by performing a step of adjusting a confidence value for at least one of the first and second location estimates, wherein values for at least some of the following factors are used in adjusting the confidence value: (a) how closely the location estimate matches a predetermined route, (b) how likely an estimated velocity of the particular mobile station is for a geographical area having the location estimate; (c) how closely the location estimate corresponds to a different estimate for locating the particular mobile station; (d) how closely the location estimate corresponds to an extrapolated location estimate of the particular mobile station.

¹²
91. (New) A method for locating a particular mobile station, comprising:
receiving, at a vehicle rental agency, location information of the particular mobile

station, wherein said particular mobile station resides in a rental vehicle of the rental agency, said rental vehicle having been dropped off at a location that is remote from a premise operated by the vehicle rental agency;

wherein said location information is obtained by the vehicle rental agency from a network (NTWK₀) of one or more networks, wherein:

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- (a) for each of said networks, there are a plurality of base stations for at least one of transmitting and receiving signals with a plurality of mobile stations in communication with the network; and
 - (b) the particular mobile station is recognized by at least one network (NTWK_{reg}) of the networks for mobile communications, wherein when the networks NTWK₀ and NTWK_{reg} are different, there is an overlapping coverage area having said particular mobile station therein;

wherein said particular mobile station transmits communications, via NTWK₀, for use in obtaining the location information; and

using said location information for accessing said rental vehicle.

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92 (New) 12
The method of Claim 91, wherein NTWK_{reg} and NTWK₀ are one of: a same network and operated by a same commercial radio service provider.

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93. (New) 12
The method of Claim 91, wherein said step of receiving is provided via the Internet.

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94. (New) 2
The method of Claim 91 further including receiving vehicle operation information from sensors on the rental vehicle.

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95. (New) 15
The method of Claim 94, wherein said vehicle operation information is used for controlling an operation at the rental vehicle.